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ABSTRACT

To determine how school districts are handling the problems of asbestos in their schools, the General Accounting Office (GAO) conducted interviews and asked standarized questions of officials at 6 Environmental Protection Agency (EPA) regional offices, 12 state offices, and 36 school districts in 12 states. This report presents information on the framework in which decisions on asbestos are being made, the appropriateness of the abatement actions, and the quality of the abatement work. Researchers found asbestos in over one-half of the schools in districts visited. In these 36 districts, 28 used consultants and 12 reported difficulty in identifying qualified consultants, and over $51 million had been spent on asbestos abatement. Suggestions cited the most frequently by EPA, state, and school district officials and by at least one official at each level of government included: (1) require state certification of contractors and consultants, (2) establish an independent governmental unit to monitor and inspect abatement actions, (3) provide better technical guidance and assistance, (4) establish a definitive standard specifying the level of exposure that should be abated, (5) provide more information about asbestos hazards and remedies, and (6) increase federal funding for abating asbestos. (MLF)

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BY THE U.S. GENERAL ACCOUNTING OFFICE

Report To The Chairman, Subcommittee On HUD—Independent Agencies, Committee On Appropriations House Of Representatives

School District Officials Face Problems In Dealing With Asbestos In Their Schools

In deciding how to resolve the asbestos problem in local school districts, officials rely on their own analyses, on the services of consultants and contractors, and on technical guidance and assistance provided by EPA and the states. However, considerable uncertainty exists about the appropriateness of the actions selected and the quality of the work being done. EPA, state, and school district officials suggested specific actions to improve the effectiveness of asbestos abatement programs. These include certifying contractors, consultants, and contractors' employees, establishing definitive guidelines for assessing hazards, and developing better technical guidance and assistance.

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WASHINGTON, D.C. 20548

RESOURCES, COMMUNITY, AND ECONOMIC DEVELOPMENT DIVISION

B-206367

The Honorable Edward P. Boland
Chairman, Subcommittee on HUD—Independent Agencies
Committee on Appropriations
House of Representatives

Dear Mr. Chairman:

As requested in your October 4, 1984, letter and our subsequent discussions with your office, this report describes how 36 public school districts are dealing with the problems associated with asbestos in their school buildings. This information was first presented to your office in a formal briefing on February 5, 1985. Subsequently, your office requested that we prepare this report covering the information presented in that briefing.

The abatement of friable asbestos material in schools involves four basic stages: the determination that friable asbestos material is present in a school building, a decision on what abatement action to take, the actual performance of the abatement work, and, finally, a post-abatement inspection to ensure that the work has been done correctly. (Friable material is material that can be crumbled, pulverized, or reduced to powder by hand pressure.) At each stage, school district officials decide what action to take by relying on their own analyses of the situation, on guidance from consultants and contractors, on technical guidance documents from the Environmental Protection Agency (EPA), and on assistance from EPA and state officials.

This report, which is in the form of a briefing document supplemented by a narrative, presents information on: the framework in which decisions on asbestos in the schools are being made; the abatement actions that school districts are taking; the appropriateness of the abatement actions; the quality of the abatement work; and suggestions we received for resolving problems associated with asbestos in the schools.

Our review and analyses of how school districts are handling asbestos problems indicates that

--school district officials do not believe that EPA's technical guidance documents alone are adequate for making decisions on asbestos in the schools;

--school districts are relying heavily on consultants to provide advice throughout the abatement process;

--removal is the most frequently selected abatement action;

--contractors are being used extensively to perform abatement work;

--some school districts are having difficulty identifying qualified consultants and contractors; and

--school districts are generally satisfied with the appropriateness of abatement actions selected and the quality of the work done, although some EPA and state officials are not as satisfied.

Generally, EPA, state, and school district officials believe that additional assistance, such as certification of consultants and contractors, definitive standards for assessing hazards, and better technical guidance and assistance, is needed.

Local school districts have to assess the risks associated with asbestos in individual schools and the need for asbestos abatement actions. Since these local decisionmakers generally lack the technical expertise to make these decisions, they tend to seek assistance from others. If the asbestos problem is to be resolved effectively and economically, it is important that capable consultants, contractors, and inspectors be available to meet the needs of local school districts, and that local school district officials be able to identify them.

We did not obtain official agency comments on this report. However, as you requested, we presented the same formal briefing that we gave your office to EPA's Assistant Administrator for Pesticides and Toxic Substances--the EPA official responsible for the asbestos-in-schools program--and his staff on February 19, 1985. In addition, we discussed a draft of this report with EPA officials. We incorporated EPA's comments where appropriate.

This report is based largely on information obtained during interviews with federal, state, and local school district officials who were most directly involved with the asbestos issue. We did not verify the information in most cases because of our short timeframe. Since time did not permit the use of a statistically valid sample, our data, based on a sample of 36 public school districts in 12 states, cannot be projected to the entire school district population. EPA, using a statistical sample, has gathered information on the asbestos school inspection program. However, there are no current national figures available on abatement actions or their costs. This report

nevertheless provides valuable information on how certain school districts are tackling asbestos problems and presents officials' suggestions for how this problem can be addressed more effectively. (The scope and methodology for this study are explained in detail on pages 11, 12, and 13.)

As arranged with your office, we are sending copies of this report to the Administrator, Environmental Protection Agency. Copies will also be available to other interested parties upon request.

Sincerely yours,

J. Dexter Peach
Director

BRIEFING DOCUMENT ON GAO'S REVIEW OF ASBESTOS IN THE SCHOOLS

DONE AT THE REQUEST OF THE CHAIRMAN, SUBCOMMITTEE ON HUD-INDEPENDENT AGENCIES, HOUSE COMMITTEE ON APPROPRIATIONS

ASBESTOS

- IT IS A NATURALLY OCCURRING FIBROUS MATERIAL
- IT WAS USED EXTENSIVELY IN BUILDING CONSTRUCTION FOR ITS FIREPROOFING, INSULATING, AND OTHER PROPERTIES
- AIRBORNE ASBESTOS FIBERS, WHEN INHALED, HAVE BEEN FOUND TO CAUSE CANCER AND OTHER DISEASES
- CONSIDERABLE CONCERNS HAVE BEEN RAISED BECAUSE OF ASBESTOS' PRESENCE IN SCHOOLS AND RISKS POSED TO CHILDREN

Asbestos

The term "asbestos" refers to a wide variety of naturally occurring mineral silicates that separate into fibers. Asbestos minerals are commercially valuable--and used extensively--for their fireproofing, insulating, and acoustical properties as well as for their tensile strength. Characteristics of durability, flexibility, strength, and resistance to wear make asbestos well-suited for an estimated 3,000 separate commercial, public, and industrial applications, including roofing and flooring products; fireproofing textiles; friction products; reinforcing material in cement, pipes, and coating material; and thermal and acoustical insulations.

Although asbestos is valuable commercially, a person's exposure to airborne asbestos has become a cause for concern. Exposure to airborne asbestos is associated with a debilitating lung disease, asbestosis; a rare cancer of the chest and abdominal lining, mesothelioma; and cancers of the lung, esophagus, stomach, colon, and other organs. These health problems were first identified in people working in occupations in which they were exposed to very high levels of asbestos fibers over a long period of time. Further evidence has identified these diseases in persons working in non-asbestos related occupations.

Asbestos is generally found in the ambient air. In most cases the level of asbestos in the air is not significantly higher inside buildings than in the ambient air outside. However, when friable asbestos materials in buildings are damaged, exposure levels can be higher. Exposed children and young adults, due to their longer remaining life spans, have a greater chance of developing certain of these diseases than older adults. For these reasons, the general public, EPA, and others have been deeply concerned about the presence of friable or easily damaged asbestos in the schools.

GIVEN THESE CAUSES FOR CONCERN, THE ENVIRONMENTAL PROTECTION AGENCY

- **BANNED CERTAIN USES OF ASBESTOS, AND**
- **REQUIRED SCHOOL DISTRICTS TO INSPECT SCHOOL BUILDINGS TO DETERMINE IF THEY CONTAIN ASBESTOS**

EPA Acted to Help Mitigate Asbestos Problems

Since the asbestos issue was raised, the Environmental Protection Agency (EPA) has taken action to address asbestos problems, including asbestos in the schools. EPA's authority for action comes under Section 6 of the Toxic Substances Control Act, Section 112 of the Clean Air Act, and the Asbestos School Hazard Abatement Act (Public Law 98-377). In 1973 EPA banned the spraying of insulation containing asbestos in buildings. In 1978 EPA extended the ban to all uses of sprayed-on asbestos on buildings, structures, beams, ceilings, walls, pipes, and conduits. EPA also mandated work practices to be followed when buildings containing asbestos material were demolished or renovated.

The concerns about using asbestos in construction led to concerns about the asbestos already present in buildings, especially school buildings. EPA established a technical assistance program in 1979 to encourage schools to voluntarily identify and correct asbestos hazards. EPA initiated formal rulemaking on asbestos in the schools in July 1979 and issued its final rule on May 27, 1982. This regulation requires that schools be inspected and employees and parent-teacher associations be notified if friable asbestos material is found. Friable asbestos material refers to any material containing more than 1 percent asbestos by weight that can be crumbled, pulverized, or reduced to powder, when dry, by hand pressure. Friable materials that are covered with a hard wrap or a coating, such as pipe insulation, are considered non-friable unless damage to the covering exposes the friable material.

GAO ASKED TO PROVIDE INFORMATION ON AND ANALYSES OF HOW SCHOOL DISTRICTS ARE HANDLING THE PROBLEMS OF ASBESTOS IN THEIR SCHOOLS

- INFORMATION OBTAINED FROM 6 EPA REGIONS, 12 STATES, AND 36 SCHOOL DISTRICTS
- DATA PRESENTED IN THIS REPORT ARE NOT PROJECTABLE

GAO Asked to Provide Information on and Analyses of How School Districts Are Handling the Asbestos Problem

On October 4, 1984, the Chairman, Subcommittee on HUD—Independent Agencies, House Committee on Appropriations, requested that the U.S. General Accounting Office (GAO) provide information on and analyses of how school districts are handling the problems of asbestos in their schools. The Chairman specifically requested information on efforts by EPA and states to guide and assist school districts in tackling this issue; on the process by which school districts make abatement decisions; on the appropriateness of abatement actions; and on the quality of the work being done.

This report is based largely on information obtained during interviews with federal, state, and local school district officials who were most directly involved with the asbestos issue. We did not verify the information in most cases because of our short timeframe. Since time did not permit the use of a statistically valid sample, our data, based on a sample of 36 public school districts in 12 states, cannot be projected to the entire school district population. This report nevertheless provides valuable information on how 36 public school districts are tackling their asbestos problems and presents officials' suggestions for resolving these problems more effectively.

To obtain information on the treatment of asbestos in schools, we visited 6 EPA regional offices--Atlanta, Dallas, Kansas City, New York, Philadelphia, and San Francisco; state offices in 12 states (2 states in each region)--Florida, South Carolina, Oklahoma, Texas, Iowa, Missouri, New Jersey, New York,

Maryland, Pennsylvania, California, and Nevada; 36 public school districts (3 in each state); and 36 schools (1 school in each school district).

Before selecting the EPA regions and states for our work, we consulted with EPA headquarters officials to identify EPA regions and states that had different levels of activity programmed to tackle asbestos in the schools. We also obtained from EPA headquarters other policy and program information about its actions regarding asbestos.

Within each state we selected three public school districts, each with the distinct characteristic of being urban, suburban, or rural. Since school districts are the primary decisionmakers on matters involving asbestos in the schools, we selected school districts that had taken some abatement actions, including school districts that had utilized a mix of abatement actions.

We conducted interviews and asked standardized questions of EPA regional and state officials who provided guidance and assistance on asbestos matters and who administered asbestos programs directed at schools and other entities within the states. We also conducted interviews and asked standardized questions of school district, school, and some health officials. The standardized questions served as the primary data collection instruments for ensuring consistency in the data collected from the large number of participants involved. The interviews supplemented this data collection, giving us an understanding of asbestos activities unique to each participating entity's program. We generally collected supplementary documents and data when available.

At EPA headquarters we interviewed officials to obtain information about EPA's policies on asbestos in the schools and its past, current, and future actions on this issue. We also obtained the EPA technical guidance documents provided to EPA regions, states, and school districts on how to handle asbestos in schools.

We analyzed the responses provided to our questions to determine areas of concern and to detect trends.

THREE LEVELS OF GOVERNMENT ARE INVOLVED IN TACKLING ASBESTOS IN THE SCHOOLS:

- **EPA**
- **STATES**
- **LOCAL SCHOOL DISTRICTS**

Three Levels of Government Involved in Tackling Asbestos in the Schools

EPA at the federal level, states, and school districts are the three major entities tackling asbestos in the schools. EPA's authority for acting on the asbestos issue is provided by the Toxic Substances Control Act; the Clean Air Act; and the Asbestos School Hazard Abatement Act. Most states have taken some action in establishing state requirements or assistance programs for handling asbestos in their state. However, school districts are primarily responsible for hands-on management of the asbestos found in their schools.

EPA PROVIDES SCHOOL DISTRICTS WITH

- DOCUMENTS GIVING TECHNICAL GUIDANCE
- TECHNICAL ASSISTANCE PROGRAMS

EPA Provides Assistance to School Districts

In 1979 EPA established a technical assistance program in response to the general public's concerns about asbestos in the schools. The program provides information and advice to state and school district officials and encourages them to initiate programs for asbestos inspection and abatement. The two major components of the program are the technical guidance documents and the regional assistance programs.

EPA distributed its technical guidance documents to state governors, state asbestos program coordinators, and local school districts. The documents provide information on the health hazards associated with asbestos and outline steps school district officials could take to identify asbestos-containing materials and to protect students and school personnel from exposure. The documents describe four approaches to abating and controlling exposure to asbestos:

1. Removal: Asbestos material is removed, packed into leak-tight containers, and transported to a disposal site.

2. Encapsulation: Asbestos material is sprayed or coated with a sealant.

3. Enclosure: Airtight walls and ceilings are constructed around surfaces coated with asbestos-containing materials.

4. Special operations and maintenance: Proper maintenance and periodic reassessment of the need for other control measures are used when the asbestos material is in good condition and has a low potential for disturbance or erosion.

The other major component is the regional technical assistance programs run by the regional asbestos coordinators. While the amount of assistance varies by EPA region, the assistance generally provided includes training courses, seminars, responses to inquiries, and lists of contractors and consultants interested in doing asbestos work. EPA has a contract with the American Association of Retired Persons whereby retired persons help provide technical assistance at the EPA regions.

STATES' ACTIVITIES VARY IN

- ABATEMENT REQUIREMENTS
- FUNDING FOR ABATEMENT WORK
- TECHNICAL ASSISTANCE TO SCHOOL DISTRICTS

States' Activities Vary

State asbestos programs for assisting local school districts varied greatly among the 12 states we visited. State assistance may include requiring certain abatement actions, providing funds for abatement actions, and providing technical assistance. For example, officials in two states indicated that removal is required; officials in seven states said that removal is encouraged; and officials in three states said that the state had no policy on which abatement action to take. Four of the 12 states provided some type of financial assistance for asbestos abatement. The technical assistance programs ranged from no program at all in one state to one program that provides standard contract specifications, requires removal, and provides financial assistance to the school districts. In two states, the Departments of Health inspect schools and perform hazard evaluations.

SCHOOL DISTRICTS ARE RESPONSIBLE FOR MAKING AND CARRYING OUT DECISIONS ON ASBESTOS

SCHOOL DISTRICTS MUST DETERMINE

- WHETHER FRIABLE MATERIALS ARE PRESENT; IF THEY CONTAIN ASBESTOS; AND IF SO, HOW MUCH?
- THE DEGREE OF RISK ASSOCIATED WITH THE MATERIALS FOUND IN THE SCHOOLS
- WHAT ACTION IS MOST APPROPRIATE FOR DEALING WITH THESE MATERIALS

ONCE SCHOOL DISTRICTS DECIDE WHAT ACTIONS TO TAKE, THEY MUST ENSURE

- THAT ABATEMENT WORK IS PROPERLY DONE
- THAT EXPOSURE TO ASBESTOS HAS BEEN ADEQUATELY ABATED

School Districts Are Responsible for Making and Carrying Out Decisions on Asbestos

School district officials must make several decisions to effectively abate the asbestos hazards found in their schools. First, they must determine whether friable material is present and if it contains asbestos. Second, school districts must then try to determine whether the degree of exposure to this material is hazardous and whether action is necessary. Third, if action is judged necessary, they must determine what type of abatement action to take.

After the appropriate abatement action has been chosen, school districts must ensure that the abatement work is properly done and that the asbestos exposure has been adequately abated.

ASBESTOS FOUND IN OVER ONE-HALF OF SCHOOLS IN DISTRICTS GAO VISITED

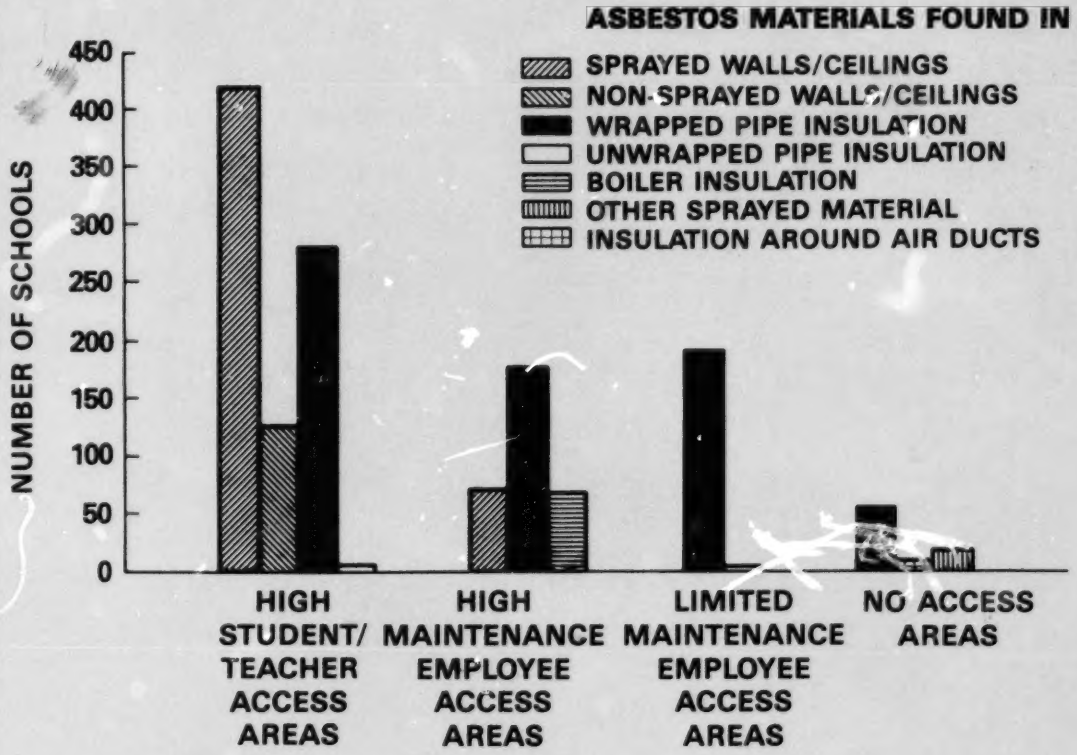
- FRIABLE ASBESTOS FOUND IN 2,068 OF THE 4,062 SCHOOLS IN THE 36 SCHOOL DISTRICTS
- WRAPPED PIPE INSULATION WAS THE MOST COMMON TYPE OF ASBESTOS FOUND

Asbestos Found in Over One-Half of Schools in School Districts Visited

According to the data we obtained from the 36 school districts, 2,068 of the 4,062 schools had friable asbestos present prior to any abatement actions. As of October 30, 1984, a total of 20 school districts reported that 1,429 schools still have friable asbestos. Fourteen school districts reported no friable asbestos present in their schools, and two school districts were unable to furnish the exact number of schools with friable asbestos.

Wrapped pipe insulation was the most common source of friable asbestos found in the schools. The second most common source of friable asbestos was found in materials that were sprayed on walls and ceilings.

ASBESTOS FOUND THROUGHOUT THE SCHOOLS, INCLUDING AREAS USED BY STUDENTS, TEACHERS, AND MAINTENANCE STAFF

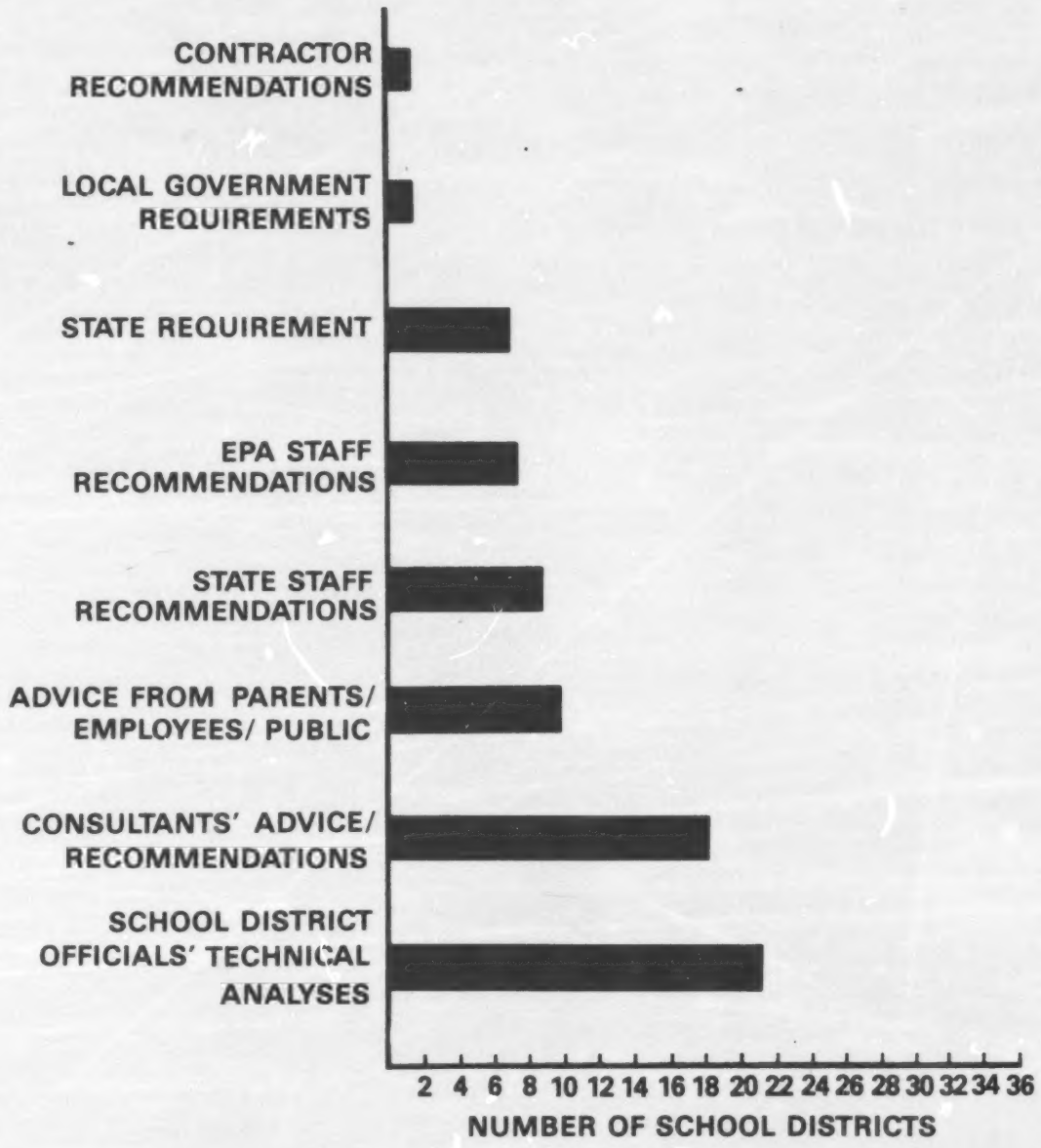


Asbestos Found Throughout the Schools

Friable asbestos has been found throughout the schools in areas of (1) high student/teacher accessibility, (2) high maintenance employee accessibility, (3) limited maintenance employee accessibility, and (4) no access (e.g., tiny crawl spaces). In areas with high student and teacher accessibility, the most common source of friable asbestos was in materials sprayed on walls and ceilings. In areas with high maintenance employee access, limited maintenance employee access, and no access, wrapped pipe insulation was the most common source of friable asbestos. This data is based on completed abatement actions reported by 29 school districts.

Given asbestos' widespread presence in schools and its known danger, the question arises as to how school districts decided what actions to take.

TWO FACTORS CITED MOST FREQUENTLY AS HAVING GREAT INFLUENCE ON ABATEMENT DECISION WERE SCHOOL DISTRICTS' OWN TECHNICAL ANALYSES AND CONSULTANTS' ADVICE/RECOMMENDATIONS


CONTRACTOR RECOMMENDATIONS
LOCAL GOVERNMENT REQUIREMENTS
STATE REQUIREMENT
EPA STAFF RECOMMENDATIONS
STATE STAFF RECOMMENDATIONS
ADVICE FROM PARENTS/ EMPLOYEES/ PUBLIC
CONSULTANTS' ADVICE/ RECOMMENDATIONS
SCHOOL DISTRICT OFFICIALS' TECHNICAL ANALYSES
2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36
NUMBER OF SCHOOL DISTRICTS

School Districts' Own Technical Analyses and Consultants' Advice and Recommendations Had Great Influence on Abatement Decisions

Although many factors influenced school district officials, their own analyses and consultants' advice and recommendations had the greatest influence on school districts' abatement decisions. School district officials' technical analyses are based on things such as their own knowledge of the current situation and history of asbestos in their schools, their past experiences, and their interpretation of the EPA guidance documents. Of the 36 school districts responding, 21 reported that technical analyses of the asbestos situation by responsible school district officials had great influence on the abatement decisions. Eighteen of the 36 school districts indicated that consultants' advice and recommendations had great influence.

Other factors cited frequently by school districts as having great influence were:

--advice from parents, employees, and/or the public	9 school districts
--state staff recommendations	8 school districts
--EPA staff recommendations	7 school districts
--state requirements	7 school districts

A number of school districts cited more than one factor as having a great influence on their decisions.

28 OF 38 SCHOOL DISTRICTS USED CONSULTANTS

- SCHOOL DISTRICTS WERE GENERALLY SATISFIED WITH CONSULTING SERVICES PROVIDED
- 12 SCHOOL DISTRICTS REPORTED DIFFICULTY IN IDENTIFYING QUALIFIED CONSULTANTS

28 of 36 School Districts Used Consultants

Twenty-eight of the 36 school districts used consultants in managing their asbestos-in-schools programs. Consultants assisted the school districts by:

--performing pre-abatement inspections, sampling, and sampling analyses;

--recommending abatement actions;

--developing plans and specifications for abatement projects;

--recommending asbestos abatement contractors;

--monitoring abatement work-in-progress;

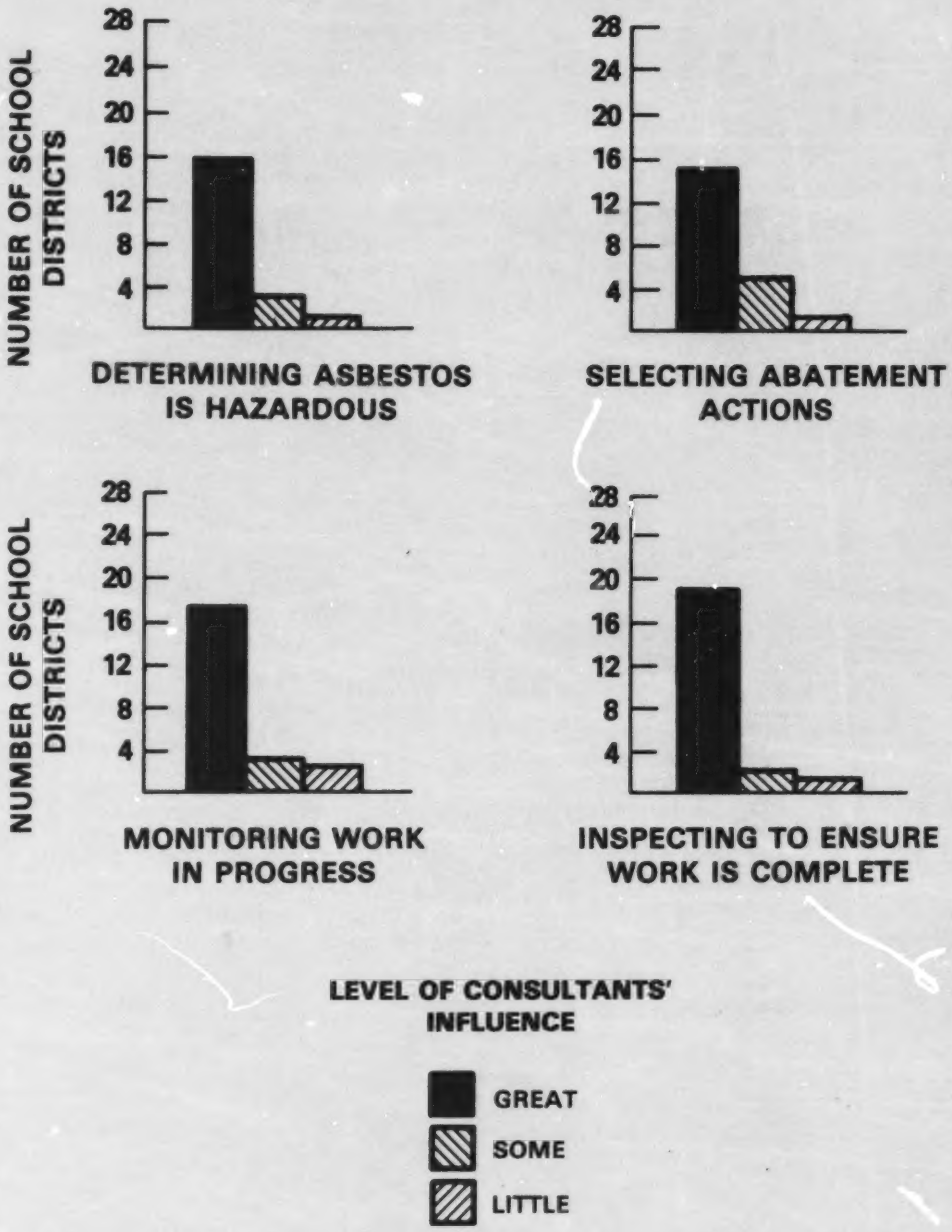
--conducting air sampling; and

--conducting post-abatement inspections.

Twenty-five of 26 school districts indicated they were generally satisfied with the consultants' assistance. Twenty-three indicated they followed the consultants' recommendations 91 to 100 percent of the time.

Twelve school districts indicated it was difficult to identify qualified consultants.

CONSULTANTS HAD GREAT INFLUENCE THROUGHOUT THE ABATEMENT PROCESS



Consultants Had Great Influence Throughout the Abatement Process

Consultants' advice influenced school district officials' decisions throughout the abatement process, including determining whether the asbestos material was hazardous, selecting abatement actions, monitoring work in progress, and inspecting to ensure that work was complete.

Twenty-eight school districts used consultants. Consultants advice had great influence in:

--16 school districts in determining that asbestos exposure was hazardous;

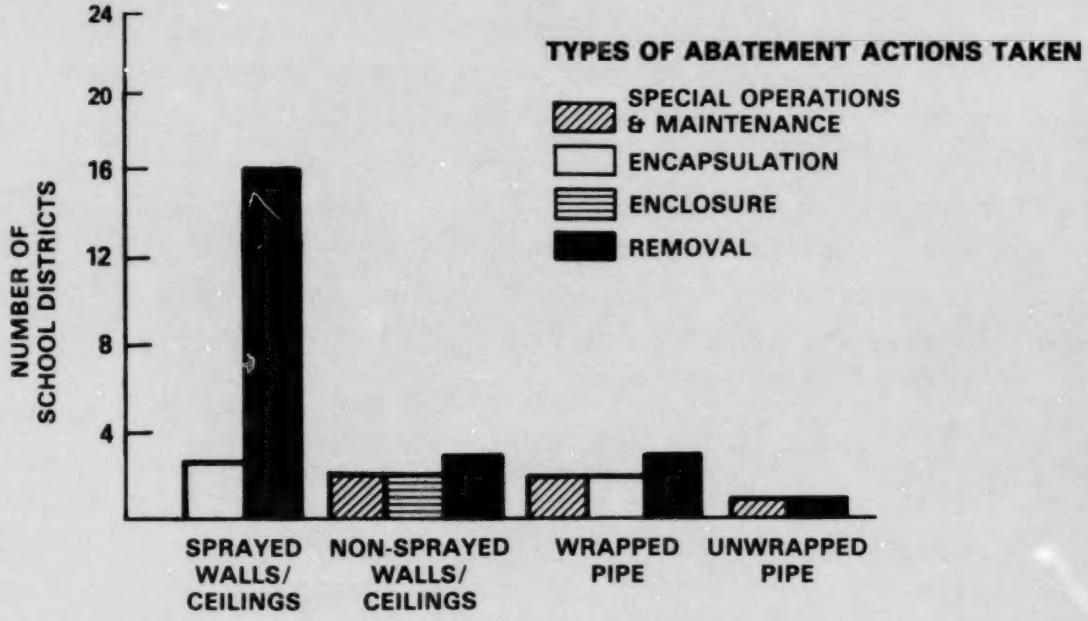
--15 school districts in selecting abatement actions;

--18 school districts in monitoring work in progress; and

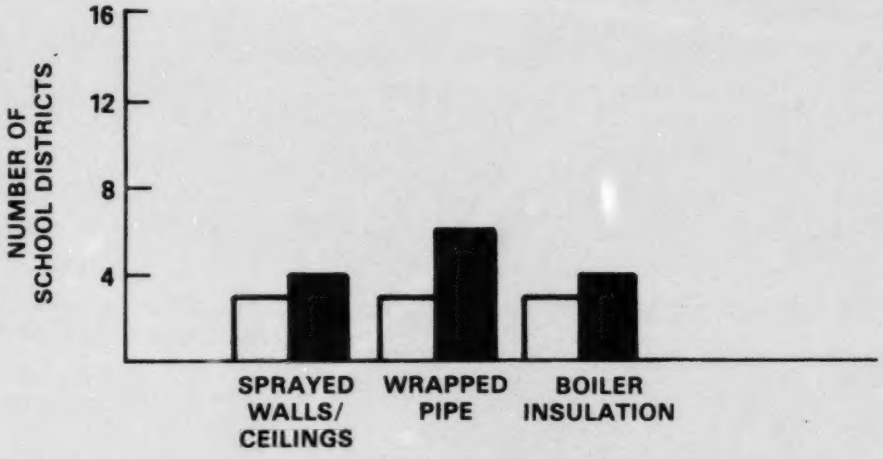
--19 school districts in ensuring that work was satisfactorily completed.

These figures indicate that school district officials' relied significantly on consultants' expertise and knowledge in managing their asbestos-in-schools programs.

REMOVAL WAS THE MOST FREQUENTLY CHOSEN ABATEMENT ACTION



HIGH STUDENT/TEACHER ACCESS AREA

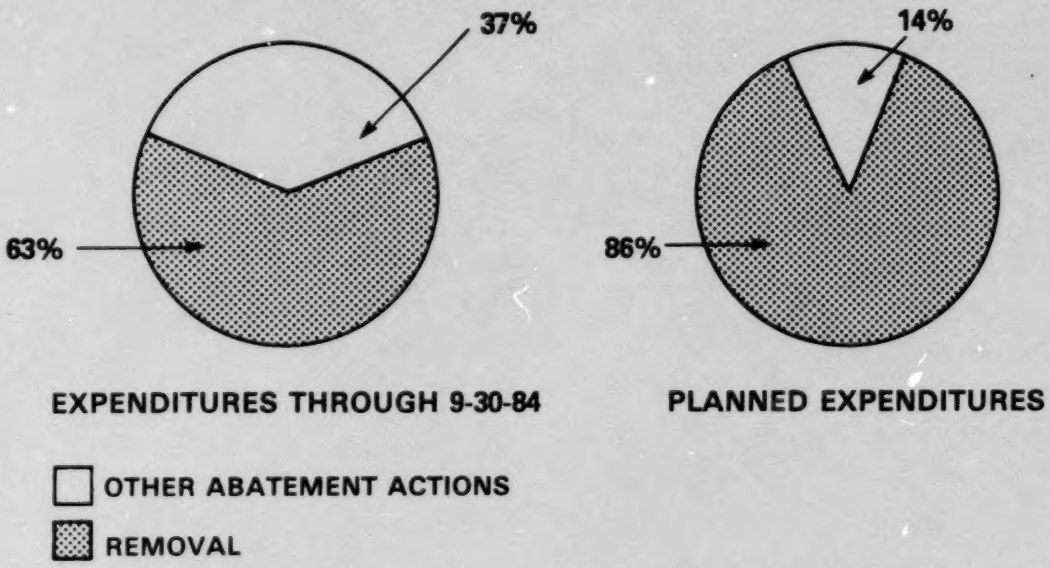


HIGH MAINTENANCE EMPLOYEE ACCESS AREA

Removal Was the Most Frequently Chosen Abatement Action

Removal was the most frequently selected abatement action. The second choice among the school districts was encapsulation. We received responses from 29 school districts on the types of abatement actions completed. According to this data, 16 school districts removed the asbestos-containing materials that had been sprayed on walls and ceilings in high student/teacher access areas (the most common source of friable asbestos in that area). School districts also chose most frequently to remove wrapped pipe insulation, which was the most common source of friable asbestos in the schools.

AN INCREASING PERCENTAGE OF ABATEMENT EXPENDITURES WILL BE SPENT FOR REMOVAL



An Increasing Percentage of Abatement Expenditures Will Be Spent for Removal

Thirty-one school districts reported past expenditures by type of abatement action through September 30, 1984. According to school district data for asbestos abatement actions, school districts used 63 percent of their expenditures for removal and 37 percent for other abatement actions. Twenty school districts reported future expenditures by type of abatement action. The 20 school districts plan to increase expenditures for asbestos removal to 86 percent and decrease expenditures for other abatement actions to 14 percent.

COST OF ABATEMENT ACTIONS

- 36 SCHOOL DISTRICTS SPENT OVER $51 MILLION THROUGH SEPTEMBER 30, 1984
- 27 SCHOOL DISTRICTS CURRENTLY PLAN EXPENDITURES OF $289 MILLION

Cost of Abatement Actions

The 36 school districts we visited spent $51,631,622 on asbestos abatement in their schools through September 30, 1984. Twenty-seven school districts reported plans to spend an additional $289,870,383 to complete asbestos abatement in the schools. Seven school districts reported no plans for future expenditures, while two reported that they did not know what they would be spending.

EXPENDITURES FOR ABATEMENT ACTIONS VARY

	EXPENDITURES THROUGH 9/30/84	PLANNED FUTURE EXPENDITURES
URBAN	$44,445,452	$283,444,915[a]
SUBURBAN	6,081,361	6,090,000[b]
RURAL	1,104,809	335,468[c]
TOTAL	$51,631,622	$289,870,383

[a]ONE SCHOOL DISTRICT DID NOT KNOW.

[b]TWO SCHOOL DISTRICTS REPORTED NO FUTURE EXPENDITURES.

[c]FIVE SCHOOL DISTRICTS REPORTED NO FUTURE EXPENDITURES; ONE DID NOT KNOW.

EXPENDITURES FOR ABATEMENT ACTIONS VARY

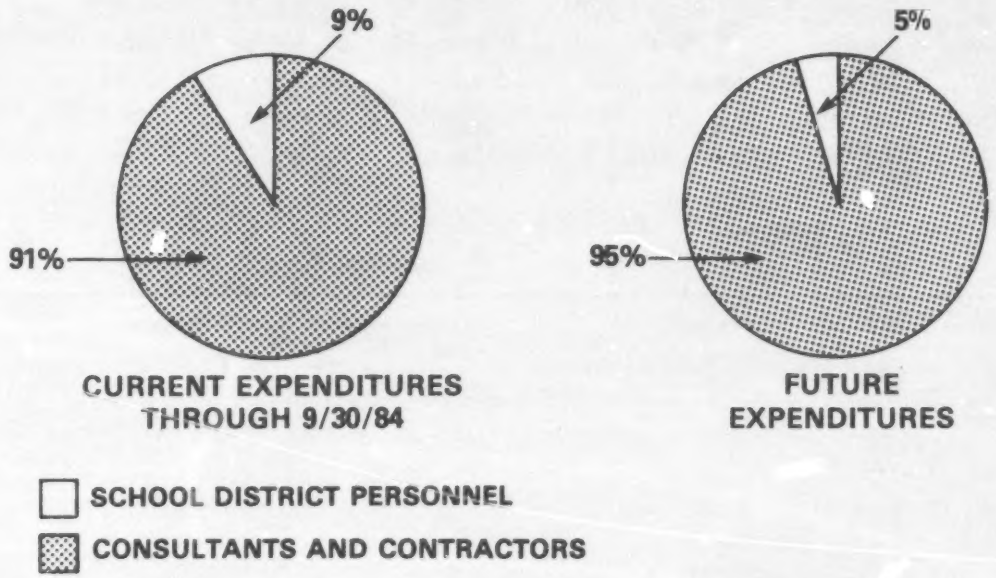
URBAN EXPENDITURES		SUBURBAN EXPENDITURES		RURAL EXPENDITURES	
THROUGH 9/30/84	FUTURE	THROUGH 9/30/84	FUTURE	THROUGH 9/30/84	FUTURE
15,025,000	94,000,000	2,003,000	60,000	395,000	0
9,099,814	24,741,759	1,600,000	175,000	221,982	40,968
5,000,000	64,000,000	1,195,386	400,000	152,000	0
4,238,512	601,280	367,250	380,000	122,742	20,000
3,463,936	827,400	294,179	242,000	60,000	0
2,060,000	4,500,000	206,933	2,200,000	38,000	0
1,882,818	11,274,476	147,000	0	35,000	50,000
1,850,000	50,000,000	105,000	2,125,000	28,158	96,700
1,000,000	4,000,000	75,000	333,000	24,000	125,000
498,000	2,500,000	43,000	0	14,877	0
188,861	a	24,613	40,000	11,550	a
138,511	2',000,000	20,000	135,000	1,500	3,500

[a]SCHOOL DISTRICTS DID NOT KNOW.

Expenditures for abatement actions can vary for reasons such as

--the number of schools with friable asbestos,
--the type of action chosen, and
--who is doing the work, contractors or school district personnel.

MOST OF THE ASBESTOS ABATEMENT FUNDS ARE SPENT FOR CONSULTANTS AND CONTRACTORS



Most Asbestos Abatement Funds Are Spent for Consultants and Contractors

For abatement actions completed as of September 30, 1984, school districts spent 91 percent of their expenditures for consultants and contractors. (Thirty-five school districts reported this data.) Nine percent of abatement expenditures were for school district personnel.

This ratio is expected to continue in the future. The percentage of school districts' planned expenditures for consultants and contractors will increase to 95 percent and the percentage for school district personnel will decrease to 5 percent. Twenty-seven school districts reported future expenditures: 24 of these reported the amounts for consultants and contractors and for school district personnel; 3 reported only totals with no breakouts.

33 SCHOOL DISTRICTS USED CONTRACTORS FOR REMOVAL AND FOR MAJOR ENCAPSULATIONS AND ENCLOSURES

- SCHOOL DISTRICTS WERE GENERALLY SATISFIED WITH WORK DONE
- 11 SCHOOL DISTRICTS REPORTED DIFFICULTY IN IDENTIFYING QUALIFIED CONTRACTORS

33 School Districts Used Contractors

Contractors have played an extensive role in school asbestos abatement programs, particularly when abatement actions involve removal and major encapsulations and enclosures. In 33 school districts, contractors were used to perform 89 percent of all removals, 50 percent of all encapsulations, and 57 percent of all enclosures.

School district officials stated they were satisfied with over 90 percent of abatement work performed by contractors for all 4 types of abatement actions (removal, encapsulation, enclosure, and special operations and maintenance).

Officials in 11 school districts reported having difficulty in identifying qualified contractors.

VIEWS DIFFER ON APPROPRIATENESS OF ABATEMENT ACTIONS

	MOST APPROPRIATE (Percent)	NOT MOST APPROPRIATE (Percent)	NO BASIS TO JUDGE (Percent)
SCHOOL DISTRICT OFFICIALS[a]	90	6	4
STATE OFFICIALS[b]	54	8	38
EPA OFFICIALS[c]	28	13	59

[a]ALL ABATEMENT ACTIONS IN THEIR SCHOOL DISTRICTS.

[b]ALL ABATEMENT ACTIONS TAKEN BY SCHOOL DISTRICTS IN THEIR STATE.

[c]ALL ABATEMENT ACTIONS TAKEN BY SCHOOL DISTRICTS IN THEIR REGIONS.

Views Differ on the Appropriateness of Abatement Actions

Whether selected abatement actions are appropriate depends on what one is seeking to accomplish. If one's objective is to eliminate the possibility of any significant exposure to asbestos in school buildings, then removal is the only abatement action that achieves this, provided it is carried out properly. Removal is generally considered appropriate if the asbestos is damaged or deteriorating. If the asbestos is not damaged or deteriorating, however, and damage or disturbance is unlikely, then action other than special operations and maintenance may not be necessary. Significant exposure is unlikely unless some future event damages the asbestos-containing material.

School districts believe the most appropriate abatement actions (i.e., removal, encapsulation, enclosure, or special operations and maintenance) were taken in the majority of cases, but EPA and state officials were not as certain. School district officials believe that 90 percent of the actions taken were the most appropriate. State officials believe that 54 percent of the actions were the most appropriate, that 8 percent were not the most appropriate, and that they had no basis to judge 38 percent of the actions. EPA officials believe that 28 percent of the actions were most appropriate, that 13 percent were not the most appropriate, and that they had no basis to judge 59 percent of the actions.

A small number of school district officials said they now believe that some of their past decisions were not the most appropriate. For example, several years ago a school district encapsulated asbestos-covered walls and ceilings, which they then considered an appropriate action. However, basing their decision on a 1984 consultant's report, officials in this school district now plan to remove the asbestos material at a cost of over $2 million. Another school district, changing its policy, now considers encapsulation an inappropriate action.

VIEWS DIFFER ON HOW WELL THE ABATEMENT WORK WAS PERFORMED

	PERFORMED SATISFACTORILY/ ADEQUATELY (Percent)	PERFORMED UNSATISFACTORILY/ INADEQUATELY (Percent)	NO BASIS TO JUDGE (Percent)
SCHOOL DISTRICT[a]	93	7	–
STATE[b]	34	14	52
EPA[c]	50	18	32

[a] ALL REMOVAL ACTIONS PERFORMED BY CONTRACTORS IN THEIR SCHOOL DISTRICT.

[b] ALL REMOVAL ACTIONS PERFORMED BY CONTRACTORS AT SCHOOL DISTRICTS IN THEIR STATES.

[c] ALL REMOVAL ACTIONS PERFORMED BY CONTRACTORS AT SCHOOL DISTRICTS IN THEIR REGIONS.

Views Differ on How Well the Abatement Work Was Performed

Whether the abatement work is being done adequately depends on a number of factors. To achieve quality abatement work it is essential (1) that contractors and their employees know how to properly do the work or that school district personnel can adequately describe and specify how the work is to be done; (2) that work is properly monitored to ensure compliance with procedures and safeguards; and (3) that post-abatement inspections are adequate to assure that the risk of exposure to asbestos has been reduced. However, the officials we interviewed expressed concern about the knowledge and abilities of contractors and school district personnel, as well as about the quality of the monitoring of work in progress and post-abatement inspections.

School district officials believe abatement work is adequately done, but EPA and state officials are generally less satisfied with the adequacy of the work. For example, school district officials believe that 93 percent of contractors' removal work was adequately done and that 7 percent was inadequately done. (This data is based on the responses of 26 school district officials.) State officials believe that 34 percent of the work was adequately done, that 14 percent was inadequately done, and that they have no basis to judge 52 percent of the work. EPA officials believe that 50 percent of the work is adequately done, that 18 percent is inadequately done, and that they have no basis to judge 32 percent of the work.

OFFICIALS' SUGGESTIONS FOR RESOLVING PROBLEMS WITH ASBESTOS IN THE SCHOOLS

- REQUIRE STATE CERTIFICATION OF CONTRACTORS AND CONSULTANTS
- ESTABLISH AN INDEPENDENT GOVERNMENTAL UNIT TO MONITOR AND INSPECT ABATEMENT ACTIONS
- PROVIDE BETTER TECHNICAL GUIDANCE AND ASSISTANCE
- ESTABLISH DEFINITIVE STANDARD FOR EXPOSURE LEVELS THAT SHOULD BE ABATED
- PROVIDE MORE INFORMATION ABOUT ASBESTOS HAZARDS AND REMEDIES
- INCREASE FEDERAL FUNDING FOR ABATING ASBESTOS

Officials' Suggestions for Resolving Problems With Asbestos in the Schools

EPA, state, and school district officials offered many suggestions for resolving problems associated with asbestos in the schools. These suggestions were cited the most frequently and by at least one official at each level of government.

REQUIRE STATES TO CERTIFY

- **ABATEMENT CONTRACTORS**
- **CONTRACTORS' EMPLOYEES**
- **CONSULTANTS**

Require State Certification

According to officials we interviewed, a state certification program is necessary to ensure that consultants, contractors, and contractors' employees involved with asbestos work are knowledgeable and capable, and that school districts needing assistance can identify qualified experts. Officials considered enforcement essential for certification programs if they are to be successful in achieving quality performance. Enforcement should include inspecting the performance of asbestos consultants and contractors and revoking their certification for inadequate performance.

One such program exists in the state of Maryland. Maryland's program requires business entities that remove or encapsulate asbestos to be licensed and each employee to complete a state-approved course on the proper methods for removing and encapsulating asbestos. Maryland also has a state policy to prequalify consultants to be used on state removal and encapsulation projects.

EPA Actions

EPA is currently developing (1) a model state program for certifying contractors and contractors' employees, and (2) guidance for school districts on how to determine a contractor's capability for performing asbestos abatement work. The contractor certification program will include standards and guidance for training and certifying contractors. The guidance on contractor capability includes standards and procedures for assessing a contractor's reliability, capability, and prior asbestos work experience. EPA currently has cooperative agreements with the state of Maryland and the Georgia Institute of Technology to assist EPA with this work.

EPA's model certification program, which is under development, does not include consultant certification.

ESTABLISH AN INDEPENDENT GOVERNMENTAL UNIT TO MONITOR AND INSPECT ASBESTOS ABATEMENT ACTIONS

Establish an Independent Governmental Unit to Monitor and Inspect Abatement Actions

To ensure that abatement work is properly done, officials believe an independent governmental unit is needed to monitor and inspect asbestos abatement actions. In these officials' judgment the existence of a cadre of specially trained inspectors would help assure school districts that work is being properly done.

EPA Actions

The Asbestos School Hazard Abatement Act requires EPA to establish standards or procedures for school districts to use in conducting asbestos abatement activities. In line with this requirement, EPA recommends that states provide inspectors to monitor abatement performance. EPA also recommends that states or school districts, or both as a joint effort, appoint an asbestos coordinator whose responsibilities would include the oversight and evaluation of abatement projects.

PROVIDE BETTER TECHNICAL GUIDANCE AND ASSISTANCE

- REVISE TECHNICAL GUIDANCE DOCUMENTS
- DEVELOP SPECIFIC GUIDANCE FOR DIFFERENT TYPES OF EXPOSURE SITUATIONS
- ESTABLISH AN INFORMATION CLEARINGHOUSE

Provide School Districts With Better Technical Guidance and Assistance

Officials believe that school district officials need better technical guidance and assistance. Officials interviewed suggested that EPA revise its technical guidance documents, develop specific guidance for different types of situations involving asbestos, and establish an information clearinghouse. Of the school district and state officials commenting, 70 and 85 percent, respectively, do not believe that EPA's current technical guidance documents alone provide sufficient information to accomplish the essential tasks of managing an asbestos abatement program. In addition, 50 percent of the EPA regional asbestos coordinators we interviewed had similar problems with these documents. School district officials believe that guidance on what to do in different types of exposure situations and an information clearinghouse would help them properly manage asbestos problems in their schools.

EPA Actions

EPA has begun certain actions in these areas. It is currently planning to issue its revised and expanded technical guidance documents in June 1985. These guidance documents are intended to provide more practical guidance to school officials handling asbestos abatement. EPA is also increasing its technical assistance staff from 10 in fiscal year 1984 to 23 in fiscal year 1985; similarly, it is increasing its contract with the American Association of Retired Persons (to hire and train asbestos technical advisors) from $0.5 million in fiscal year 1984 to $1.0 million in fiscal year 1985. In addition, EPA is establishing three information and training centers that will serve as information clearinghouses.

ESTABLISH A DEFINITIVE STANDARD SPECIFYING THE LEVEL OF EXPOSURE THAT SHOULD BE ABATED

Establish a Definitive Standard Specifying the Level of Exposure That Warrants Action

Officials want more specific guidance to define when the asbestos exposure is at a level that warrants action. A definitive standard should help officials determine whether they need to act now or at some future point.

EPA Actions

EPA's position is that any level of exposure to airborne asbestos presents some risk. However, EPA has not established at what level action should be taken to abate the risk. EPA has developed a system for ranking hazards that may help school districts assess the relative levels of exposure associated with different asbestos conditions. While this is a step in the right direction, it does not establish at what exposure level action should be taken. This system's hazard-ranking table may help ensure that everyone uses a common approach in prioritizing asbestos hazards. The hazard-ranking table identifies three characteristics of an asbestos exposure situation that should be considered in prioritizing different asbestos conditions. The three characteristics are

--the degree of damage to the asbestos-containing friable material,

--whether the asbestos-containing friable material is exposed, and

--whether the asbestos-containing friable material is located in or near a forced air stream.

PROVIDE MORE INFORMATION ABOUT ASBESTOS HAZARDS AND REMEDIES FOR

- **ASBESTOS WORKERS**
- **ASBESTOS DECISIONMAKERS**
- **THE GENERAL PUBLIC**

Provide More Information About Asbestos Hazards

Officials believe that school district employees, contractors, and contractors' employees need more training to perform asbestos abatement effectively. These officials also believe that increasing public awareness about asbestos would help.

EPA Actions

The Georgia Institute of Technology has had a program dealing with asbestos for several years. EPA is currently establishing similar programs at the University of Kansas and Tufts University and will begin providing funds to the Georgia Institute of Technology. These programs will offer training that includes

--a 5-day course for abatement workers,

--a 3-day course for abatement decisionmakers, and

--a 1-day basic awareness course for the general public.

PROVIDE FEDERAL FUNDING
FOR ABATING
ASBESTOS IN SCHOOLS

Provide Federal Funding for Abating Asbestos in Schools

Officials also suggested that the federal government provide federal funds for asbestos abatement. According to some officials, the absence of funds to abate the asbestos sometimes caused officials to postpone action or select a less appropriate action.

EPA Actions

EPA has not requested any funds for abating asbestos in the schools. The Asbestos School Hazard Abatement Act of 1984 authorized $600 million over 7 years for funding grants and loans to school districts for asbestos abatement. Congress appropriated $50 million for this purpose in August 1984. EPA can use up to 10 percent ($5 million) for the program's administrative costs. In June 1985 EPA plans to award $45 million in grants and loans to school districts for asbestos abatement. As of March 1, 1985, no additional funds have been appropriated.

GAO PERSPECTIVE

- EPA ACTIONS HAVE CREATED A SENSE OF AWARENESS AND URGENCY TO DO SOMETHING ABOUT ASBESTOS IN THE SCHOOLS
- IN SPITE OF LIMITED EXPERTISE AND ASSISTANCE, SCHOOL DISTRICTS ARE ACTING TO ABATE ASBESTOS
- SCHOOL DISTRICTS NEED MORE GUIDANCE ON ASSESSING RISKS AND DETERMINING WHAT NEEDS TO BE DONE
- TO EFFECTIVELY AND ECONOMICALLY RESOLVE ASBESTOS PROBLEMS, IT IS IMPORTANT THAT CAPABLE CONSULTANTS, CONTRACTORS, AND INSPECTORS ARE AVAILABLE

GAO Perspective

EPA actions have created a sense of awareness and urgency to do something about asbestos in the schools. Although EPA stresses the need for action, it does not require that asbestos be abated. Local school districts have to assess the risks associated with asbestos in individual schools and the need for asbestos abatement actions. Since school district officials generally lack the technical expertise necessary to make these kinds of decisions, they tend to seek assistance from other sources.

We found that school districts are acting to abate the asbestos in their schools but they are experiencing problems in obtaining the expertise needed. The EPA technical guidance documents alone do not provide sufficient information. The type and amount of expertise available from the EPA and state governments vary and in many cases is quite limited. School districts also experienced considerable problems in finding the necessary expertise in the private sector.

School districts need more guidance on how to determine what, if anything, to do and if an action is taken, how to ensure that it is done properly. School districts also need to be able to identify and hire qualified consultants and contractors with some assurance that they are qualified. EPA is taking some actions in these areas by revising its guidance documents and establishing model contractor certification programs.

We were not able to determine if the school districts selected appropriate actions or if the work done at the school districts was adequately performed. While school district officials were generally satisfied with these decisions and the work performed, and although EPA and state officials were generally not as satisfied, no one really knows whether

appropriate actions were selected and whether the work was performed adequately.

If the asbestos in the schools problem is to be resolved effectively and economically, it is important that capable consultants, contractors, and inspectors be available to meet the needs of local school districts, and that local school district officials be able to identify them.

One means to accomplish this goal would be for states to certify that contractors, contractors' employees, and consultants are qualified to do asbestos abatement work and to require that only those certified be allowed to perform such work. Such actions are important not only to help school districts ensure that appropriate actions are being selected and that quality work is being done, but to provide the same assurances to other building and home owners dealing with their asbestos problems.

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